EXECUTIVE SUMMARY

ES.1 PROJECT PURPOSE, NEED, AND OBJECTIVES

The Program described in this Program Environmental Impact Report/Environmental Assessment (EIR/EA)[1] has, as its purpose, the final determination of the disposition of the shell mounds and remnant caissons that lie at the former sites of Chevron Platforms Hilda, Hazel, Hope, and Heidi (collectively called the 4H Platforms; Figure ES-1) on State Tidelands offshore Carpinteria, Santa Barbara County. The need for the Program is based on: (1) existing obligations for Chevron, under its approved Abandonment Plan, to ensure that the areas previously occupied by the 4H Platforms are again accessible to commercial fishers; and (2) resolving concerns with potential adverse water quality and marine biological effects that could result from the shell mounds in their current configuration. The Program's objective is to define, analyze, select and implement one or more actions described within seven identified Program Alternatives that address the disposition of the shell mounds and Hazel caissons with the least impact and greatest overall, long-term benefit to the environment. The Program ultimately selected and applied, either to individual or collective shell mound (and caisson) locations, will consist of actions drawn, wholly or in combination, from one or more Program Alternatives. The Program EIR/EA analysis is intended to identify and analyze the full range of potential significant impacts of each component action and thereby allow the consideration of any action or combination thereof at any location.

ES.2 INTRODUCTION/BACKGROUND

The 4H Platforms were installed and operated by Chevron for oil and gas production from Leases PRC 1824 and PRC 3150. When the 4H Platforms were decommissioned and removed in 1995-96, "shell mounds" consisting of drilling muds, cuttings, sediments, and shells that had accumulated under each of the platforms remained on the seafloor in depths of 90 to 130 feet. The four Platform Hazel caissons, massive structures of concrete and steel used to anchor Platform Hazel, were also left in place within the shell mound at that site. The shell mounds are roughly semi-circular, approximately 25 to 28 feet tall, with diameters ranging from 180 to 266 feet. The total volume of material contained within the shell mounds is approximately 45,000 cubic yards.

The California State Lands Commission (CSLC) and California Coastal Commission (CCC) required, as a condition of the 4H Platform removals, that the sites be free of debris and trawlable upon completion. Tests have shown that trawling is obstructed by the shell mounds. Chevron, the CSLC, and the CCC have agreed to the preparation of

1 Although this document is referred to as a Program EIR/EA, no formal co-lead agency relationship presently exists between a federal agency and the California State Lands Commission (CSLC), which is the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] section 21000 et seq.).

Figure

ES-1 Regional Project Location of the Chevron 4H Shell Mound Sites

B&W

a CEQA document, which has evolved into this Program EIR/EA, that addresses the environmental impacts of different Program Alternatives for disposition of the shell mounds. The Federal EA component of the analysis will support future permitting decisions by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA).

The Program Alternatives range from complete to partial removal, to various types of modification in place. A No Project Alternative is also considered. In support of the evaluation, numerous physical, chemical, and biological studies were conducted to address the makeup of the shell mounds and the potential consequences of their removal, modification, or abandonment in place.

Opportunity for public input to the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) process has been provided to date through publication of a Notice of Preparation (NOP), followed by a public Scoping Meeting in Santa Barbara, in June 2002. Written and oral comments were received through that process, and have been considered in preparing this Program EIR/EA.

Since mid-2002, a number of activities have occurred to further define the Program and the associated environmental analyses. For example, during Fall 2002, the CSLC, based on vibracore sampling data released in August 2002 and in consultation with numerous stakeholders, directed the preparation of a plan to conduct a "Mussel Study" to investigate the possibility of contaminants leaching from the shell mounds into the water column. This study started in February 2003 and lasted eight weeks; data and a draft report were released in June 2003. On June 26, 2003, the CSLC held a workshop in Santa Barbara to present the methods and results of the Mussel Study, and to describe the program approach to this EIR/EA.

ES.3 PROGRAM ALTERNATIVES FOR THE DISPOSITION OF THE SHELL MOUNDS

Section 2 of this Program EIR/EA describes the Program Alternatives that, individually or in combination, would achieve the Program's objectives of final disposition of the 4H shell mounds and remnant Platform Hazel caissons. These Program Alternatives are:

- Program Alternative 1 (PA1): Shell Mounds and Caissons Removal and Disposal
- Program Alternative 2 (PA2): Leveling and Spreading the Shell Mounds and Caissons Removal and Disposal
- Program Alternative 3 (PA3): Capping the Shell Mounds
- Program Alternative 4 (PA4): Modification/Enhancement of Shell Mounds as Artificial Reefs
- Program Alternative 5 (PA5): Artificial Reef at Hazel Alternative with Options to Either Remove (5a) or Spread (5b) Shell Mounds
- Program Alternative 6 (PA6): Leaving Shell Mounds and Caissons In-Place with Offsite Mitigation

In addition, the No Project Alternative is addressed.

Feasible methods to accomplish the above were identified through initial investigations by de Wit (2001) and developed further through the drafting of the Program EIR/EA. In some cases, there are alternative methods that are suitable, and these have been retained as different options within the corresponding Program Alternative. The Program Alternatives are as follows:

PA1 would accomplish the removal of the unconsolidated shell mound materials by dredging with a sealed clamshell bucket dredge to minimize the loss of sediments and contaminant dispersal during the dredging operation. To assist in the removal of materials that surround the Hazel caissons, and elsewhere if large debris is encountered in the mounds, a high-volume submersible dredge (jet) pump may also be utilized. Dredged materials would be transported by barge (contained and monitored during transport) for disposal at either the LA-2 ocean disposal site off San Pedro, or to the Port of Long Beach (POLB). At POLB, material could put to beneficial reuse, as construction fill, or it could be transferred to trucks for hauling to a recycling facility in the Taft-Bakersfield area or local landfills. Following removal of the shell mounds materials, the sites would be cleared and smoothed with a heavy-duty trawl net and tested for residual contamination. The four Hazel caissons would be demolished by a combination of explosives and mechanical means and removed as well.

PA2 would attempt to meet the permit requirements for debris removal and trawlability by spreading out the shell mound materials on the seafloor. A clamshell bucket dredge would be used initially to excavate and distribute the material around the shell mounds sites. Subsequently, the sites would be cleared and smoothed by trawling with a heavy-duty trawl net. The Hazel caissons would be removed as for PA1.

PA3 would involve capping the shell mounds and Hazel caissons with clean sediments obtained from dredging projects at the Port of Los Angeles and/or POLB, which would otherwise be disposed of at the LA-2 site off San Pedro. Clean sediments produced by local Santa Barbara-Ventura County dredging projects are needed to replenish local beaches and are not expected to be available for the shell mounds. Approximately 600,000 to 1.2 million cubic yards of sediment would be used to cap the shell mounds. This project would require formal designation of the shell mounds as disposal sites by the USACE and the USEPA.

PA4, the artificial reef alternative, would leave the shell mounds and Hazel caissons intact while surrounding them with a 6-foot high ring of rock (like that used for rip-rap) obtained from the quarry at Santa Catalina Island. The rock would provide a heterogeneous hard substrate that would increase the habitat value of the shell mounds while stabilizing and protecting them to reduce the likelihood of disruption and the release of contaminants. If approved as an artificial reef site, the shell mounds could be augmented in the future by the addition of recycled concrete, e.g., with concrete “reef balls,” which would further enhance their habitat value and provide additional protection.

PA5, the reef alternative to caisson removal, would leave the Hazel caissons in place to serve as the cornerstones of an artificial reef that would be filled in through the addition of quarry rock, resulting in a 1-acre reef at the site. PA5 has two subalternatives. Under **PA5a**, the shell mounds would be removed as in PA1. Under **PA5b**, the shell mounds would be spread and leveled as in PA2.

PA6, offsite mitigation, would leave the shell mounds and Hazel caissons in place, unmodified. Offsite mitigation measures would be implemented to address the continuing impacts of the shell mounds. These measures would include restoration and enhancement of shallow-water habitat for halibut and other fishes and invertebrates in Carpinteria Marsh; and provision of global positioning system (GPS) "net finder" equipment to affected fishers, enabling them to fish in closer proximity to the shell mounds with less risk of loss or damage to their gear.

The No Project Alternative would leave the shell mounds and Hazel caissons intact and no action would be taken.

ES.4 ENVIRONMENTAL ANALYSIS

Table ES-1 summarizes the significant impacts of and corresponding mitigation measures for each of the Program Alternatives. The following are brief summaries by resource area, as contained in this Program EIR/EA. Impact classes (e.g., Class I through IV) are also defined in Table ES-1.

ES.4.1 Air Quality (Section 3.1)

PA1 through PA5 (including 5a and 5b), involving removal or in-place modification of the shell mounds, would have significant but mitigable impacts (Class II) on air quality in the Santa Barbara County region due to daily nitrogen oxides (Nox) emissions from project activities. Emissions of NOx, reactive organic compounds (ROC), and carbon monoxide (CO) associated with the transport of materials would also be significant but mitigable (Class II) in the Los Angeles (South Coast) Air Basin region. Air quality impacts of offsite mitigation (PA6) would also be significant but mitigable (Class II); examples of impacts and mitigation measures are described in the Final EIR for the Carpinteria Salt Marsh Enhancement Plan (SBCFCWCD 2003, SCH 2003021016). Emission reduction measures and offsets would reduce all impacts to less than significant (Class III). The No Project Alternative would have no impact.

ES.4.2 Marine Water Quality and Sediment Quality (Section 3.2)

PA1 and PA5a would have beneficial effects (Class IV) due to the removal of contaminated sediments. PA1 would have short-term significant but mitigable impacts (Class II) associated with the dispersion of contaminants from the shell mound materials and the potential for spills during removal. If ocean disposal of the contaminated sediments were to occur, the impacts would be significant and unmitigable (Class I). PA2 and PA5b would have significant and unmitigable impacts (Class I) associated with the dispersion of contaminated sediments onto the surrounding seafloor. PA3, PA4,

and PA6 would all have significant but mitigable impacts (Class II). The No Project Alternative would result in unmitigated risks of contaminant releases to the marine environment if the integrity of the shell mounds were compromised, a Class I impact if such releases were to occur.

ES.4.3 Marine Benthic Habitats, Invertebrates, and Fishes (Section 3.3)

Impacts would be qualitatively the same as those described above for marine water quality and sediment quality. There would be beneficial impacts under PA1 and PA5a (Class IV) due to the removal of contaminated sediments, eliminating risks of toxicity and bioaccumulation for marine biota. Significant but unmitigable impacts (Class I) would occur for PA1 and PA5a with ocean disposal, and for PA2 and PA5b due to the spreading of contaminants on the seafloor. Other Program Alternatives (PA3, PA4, and PA6) would have significant but mitigable (Class II) impacts related to potential releases of contaminants from the shell mounds or project vessels. The No Project Alternative would result in unmitigated risks of contaminant releases to the marine environment if the integrity of the shell mounds were compromised, a Class I impact if such releases were to occur.

ES.4.4 Marine Wildlife (Section 3.4)

The impacts on marine wildlife would be qualitatively the same as described above for marine habitats, invertebrates, and fishes. This includes the beneficial impacts (Class IV) of shell mounds removal under PA1 and PA5a; significant and unmitigable impacts (Class I) of either ocean disposal (if approved under PA1) or in-place spreading (PA2, PA5b) of shell mounds sediments; and significant but mitigable (Class II) impacts associated with the release of contaminants or oil spills during program activities. In addition, significant but mitigable (Class II) impacts for PA1 through PA5 are associated with the hazards posed to marine wildlife (including potential take of marine mammals) by various program activities, including explosive demolition of the Hazel caissons. These impacts are mitigable by measures that minimize the risks to marine wildlife. The No Project Alternative would result in unmitigated risks of contaminant releases to the marine environment if the integrity of the shell mounds were compromised, a Class I impact if such releases were to occur.

ES.4.5 Commercial and Recreational Fisheries (Section 3.5)

The impacts of Program Alternatives on commercial and recreational fisheries would be qualitatively the same as described above for other marine resources. This includes the beneficial impacts (Class IV) of shell mounds removal under PA1 and PA5a; significant and unmitigable impacts (Class I) of either ocean disposal (if approved under PA1) or in-place spreading (PA2, PA5b) of shell mounds sediments; and significant but mitigable (Class II) impacts associated with the release of contaminants (including oil spills) during program activities, or in the long term if the shell mounds were left in place under PA4 or PA6. Impacts of explosive demolition (PA1) and preclusion of fishing due to program activities (applicable to all Program Alternatives that remove or modify the shell mounds) would also be significant but mitigable (Class II). There would be

additional beneficial impacts (Class IV) related to the removal of obstructions to trawling under PA1 and PA5a, and the construction of artificial reefs, which could benefit fishery resources under PA4 and PA5. Offsite mitigation under PA6 would mitigate the permanent loss of fishery habitat and fishing opportunity if the shell mounds were left in place (Class II). No Project would result in unmitigated risks of contaminant releases to the marine environment if the integrity of the shell mounds were compromised, a Class I impact if such releases were to occur.

ES.4.6 Land Use and Recreation (Section 3.6)

PA1 through PA5 would have less than significant impacts (Class III), whereas there would be no impacts in the case of PA6 and the No Project Alternative.

ES.4.7 Transportation (Section 3.7)

PA1 through PA5 would have less than significant impacts (Class III), whereas there would be no impacts in the case of PA6 and the No Project Alternative.

ES.4.8 Onshore Geology, Water Resources, and Biological Resources (Section 3.8)

PA1 through PA5 would have less than significant impacts (Class III), whereas there would be no impacts in the case of PA6 and the No Project Alternative.

ES.4.9 Safety/Hazards/Risk of Upset (Section 3.9)

PA1 through PA5 would all have potentially significant but mitigable (Class II) impacts due to safety risks associated with in-water program activities. There would be no impacts in the case of PA6 and the No Project Alternative.

ES.4.10 Other Resource Areas (Section 3.10)

The Program Alternatives would have either no impact or no significant impact on cultural resources, public services and utilities, or aesthetics. For noise, PA1 and PA2 would have less than significant (Class III) impacts, and PA3 through PA6 would have no impacts. The No Project Alternative would have no impact on any of these four resource areas.

ES.4.11 Environmental Justice (Section 3.11)

None of the Program Alternatives would have Environmental Justice impacts.

ES.4.12 Conclusion

Significant but unmitigable (Class I) impacts are associated with components of three Program Alternatives. Under PA1 and PA5a, if shell mounds materials were disposed in the ocean, there would be significant, unmitigable water quality and biological impacts. These impacts would not occur if the materials were disposed onshore.

Under PA2 and PA5b, the spreading of shell mound materials on the sea floor would have significant unmitigable sediment quality and biological impacts. Other significant impacts associated with Program Alternatives are all mitigable (Class II). Beneficial (Class IV) impacts would occur with the removal of the shell mounds (PA1 and PA5a), and, for fishery resources, with the creation of artificial reefs (PA4 and PA5). The No Project Alternative would have unmitigated impacts due to the risk of contaminant releases if the integrity of the shell mounds were compromised, a Class I impact if such releases were to occur.

ES.5 KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES

The primary areas of controversy and/or unresolved issues pertain to the relative magnitude of environmental impacts/benefits associated with removing the shell mound materials (exclusive of the Hazel caissons) versus the adverse impacts of leaving them in place. Removing the shell mound materials would result in a variety of short-term impacts, all of which, however, would be mitigable to less than significant except for disposal at sea. Evidence from the Mussel Study, as discussed in this document, suggests that there is currently no release of contaminants from the shell mounds. However, the stability of the shell mounds in the long term is unpredictable, resulting in a continuing risk of contaminant release, and the attendant potential for toxicity and bioaccumulation in marine biota, if the shell mounds are not removed. If the shell mounds are left in place, long-term monitoring and provision for remediation would be required to ensure that any contaminant releases are identified and minimized. Finally, this Program has the potential to establish a foundation for discussions about future platform decommissioning operations, resulting in further controversy over the final disposition of shell mounds.

ES.6 NEXT STEPS IN THE CEQA/NEPA PROCESS

The Draft Program EIR/EA will be circulated for review by public agencies and interested members of the public for a 60-day period, an additional 15 days beyond what the CEQA requires. The CSLC will prepare responses to comments received during this period. The Final Program EIR/EA will be prepared in conformance with State CEQA Guidelines section 15132. As lead agency for the Program EIR/EA, the CSLC is responsible for determining its adequacy pursuant to the CEQA.

The USACE does not formally take action without an application for a proposed action, but will provide input as to the adequacy of the document for federal requirements that would apply to a selected project. Chevron would be responsible for obtaining all permits from the USACE and other applicable federal, State, and local agencies.

Table ES-1. Summary of Significant Impacts and Mitigation Measures

Notes:

1. Resource areas with no significant impacts do not appear in this table (i.e., resource areas that have either no impacts or adverse but not significant impacts do not appear in this table).
2. A summary of the impact and mitigation measure is provided the first time the impact or mitigation measure is introduced in this table; subsequent references to a previously introduced impact or mitigation measure include only the *abbreviation* of the impact (e.g., MB-4) or mitigation measure (e.g., MM MB-4a).

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
Program Alternative 1: Shell Mounds and Caissons Removal and Disposal				
SECTION 3.1 AIR QUALITY				
AQ-1	II	Emissions from shell mound and caisson removal and transport activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*MM AQ-1a. The Applicant shall require all project contractors to use reformulated (emulsified) diesel fuel in project equipment. Chevron shall submit to the CSLC initial purchase orders showing purchase of reformulated diesel fuel prior to construction and a complete set of purchase orders within 30 days following project completion.* *MM AQ-1b. The Applicant shall require all project contractors to implement 2 to 4 degree injection timing retard (ITR) on all diesel-powered project equipment, where feasible.* *MM AQ-1c. The Applicant shall acquire emission reductions through the SBCAPCD Offsite Mitigation Program to offset project daily NOx emissions to less than the SBCAPCD daily threshold of 240 pounds.*	Less than significant (III)
	II	Emissions from transport and disposal activities for each Program Alternative option would exceed the SCAQMD daily and calendar quarter NOx threshold. Also, emissions from transport and disposal activities for the Kern County and SCAB disposal options would exceed the SCAQMD daily ROC and CO thresholds.	*See MMs AQ-1a and -1b* *MM AQ-1d. The Applicant shall acquire emission reductions through the SCAQMD Offsite Mitigation Program to offset project ROC, CO, and NOx emissions to less than the SCAQMD thresholds.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-1	IV	Permanent removal of contaminated sediments.	*None proposed.*	Beneficial (IV)
WQ-2	II or III	Disturbance and resuspension of shell mound materials from dredging-related operations.	*MM WQ-2a. Use of enclosed (environmental) bucket dredge and approved dredging practices, including conducting operations during favorable wind and sea conditions.* *MM WQ-2b. Submittal of design and operating procedures for a filtration system for dewatering barge, and subsequent installation on dewatering barge.* *MM WQ-2c. Plan for implementing additional Best Management Practices (BMPs) to reduce suspended sediment levels.* *MM WQ-2d. If the Waste Discharge Requirement (WDR) for the decant water discharge specifies the spatial limit of the initial mixing zone, the Applicant shall document that the quality of the discharge meets specific limits for water quality parameters at the boundary of or beyond the mixing zone.* *MM WQ-2e. Provision of on-site response team with equipment.*	Less than significant (III)
WQ-3	II or III	Residual contamination associated with mound materials that are not removed by dredging and smoothing.	*MM WQ-3a. Conduct post-clearance surveys to verify that background contamination concentrations are achieved.*	Less than significant (III)
WQ-4	I	Toxicity/bioaccumulation resulting from disposal of dredged materials offshore.	*None proposed.*	Significant and unmitigable (I)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
WQ-4	II	Toxicity/bioaccumulation resulting from spills of dredged materials during transport to/unloading at onshore transfer point.	The following mitigation measures would apply: *MM WQ-2a (approved practices including limits on loading barges)* *MM MB-4a* *MM MB-4b*	Less than significant (III)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-1	IV	Removal of the 4H shell mounds would permanently remove contaminated sediments associated with the shell mounds from the marine environment.	*None proposed.*	Beneficial (IV)
MB-2	III	Physical disturbance of benthic organisms and their habitats during shell mound removal or modification operations.	*MM MB-2a. Submittal to the California State Lands Commission for approval, implementation of anchoring/mooring plan to minimize disturbance of the seafloor and avoidance of sensitive features.* *MMs WQ-2a and WQ-2d would also apply*	Less than significant (III)
MB-3	II	Contaminants, including oil, released during project operations will disperse into the water column and onto the seafloor, resulting in toxicity and bioaccumulation during and for hours (water quality effects) to months (sediment effects) after the operations.	The following mitigation measures would apply: *MM WQ-2a through -2e* *MM WQ-3a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MB-4	I or II	Transport of materials may result in accidental spillage, or pose collision risks with other vessels that would cause spillage, thus adversely affect marine benthic habitats and biota. [Applies to transport of shell mounds materials and caissons' components.]	*MM MB-4a. Large vessels/barges engaged in transport or disposal shall remain within established vessel traffic lanes while in transit.* *MM MB-4b. Vessels, bins, and other equipment used for transport to be adequately equipped to contain materials and avoid unauthorized discharges. Applicant to record materials transported, report loses to the California State Lands Commission. Applicant responsible for unauthorized discharges.*	Significant and unmitigable (I) or less than significant (III) depending on volume spilled.
MB-5	I	Ocean disposal of shell mounds sediments, if approved, would have potentially toxic effects on marine biota.	*None proposed.*	Significant and unmitigable (I)
MB-6	II	Explosive demolition of the caissons at the Hazel site will result in the mortality of fishes and invertebrates in the immediate vicinity.	*MM MB-6a. The Applicant shall submit to the California State Lands Commission for approval, in consultation the California Coastal Commission and Department of Fish and Game, and shall subsequently implement, an Explosives Use Plan.*	Less than significant (III)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-1	IV	Removal of the 4H shell mounds would permanently remove contaminated sediments associated with the shell mounds from the marine environment.	*None proposed.*	Beneficial (IV)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MW-2	II	Mortality, injury, permanent (hearing) threshold shift, temporary threshold shift, and/or harassment from explosives.	*MM MW-2a. Preparation of Marine Wildlife Protection Plan, including key contacts, vessels and equipment, contractors, schedules, procedures and acoustic deterrence options.* *MM MW-2a1. Independent, third party monitors approved by NOAA Fisheries and CDFG.* *MM MW-2a2. Notice to agencies and wildlife rescue organizations: briefing of key personnel.* *MM MW-2a3. Multiple, reliable communications.* *MM MW-2a4. Aerial and vessel line transect surveys. Tagging of dead floating wildlife; determination of cause if possible. Moving animals from hazard zone if authorized.* *MM MW-2a5. Harassment authorization to coax animals out of hazard zone.* *MM MW-2a6. Establishing and maintaining 1000-meter hazard zone; adjusted if warranted.* *MM MW-2a7. Use of visual signals if radio silence imposed. Detonation of as many charges as possible in staggered sequence no later than one hour before sunset.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MW-2 (cont.)			*MM MW-2a8. Use of minimal amount of explosives. Stemming of charges. Use of berm around detonation sites.* *MM MW-2a9. Measurement of sound pressure levels and adjustment of hazard zone if indicated.* *MM MW-2a10. Recording data to assess effectiveness of mitigation.* *MM MW-2a11. Surveying after detonation.* *MM MW-2a12. Notification of rescue centers if any wildlife injured. Report submitted within 24 hours.* *MM MW-2a13. Final mitigation monitoring report.* *MM MB-6a would also apply.*	
MW-3	II	Use of mechanical cutting would result in the prolonged presence of equipment and attendant risks.	The following mitigation measures would apply: *MM MW-2a1 through -2a13* *MM MW-4a1 through -4a3* *MM MW-6a*	Less than significant (III)
MW-4	II	Increased vessel traffic, mooring buoys, waste discharge, unauthorized fishing, and anchoring can result in mortality, injury or harassment.	*MM MW-4a1. Guidelines for vessel maneuvering when marine mammals are present.* *MM MW-4a2. Use of small spherical mooring buoys to preclude sea lions hauling out in hazard zone.* *MM MW-4a3. No discharge of food wastes or fishing activities.* *MB-2a would also apply.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MW-5	II	Dredging activities resulting in release of bioaccumulative or toxic substances.	The following mitigation measures would apply: *MM WQ-2a through -2e* *MM WQ-3a* *MM MB-2a*	Less than significant (III)
MW-6	II	Dredging sounds causing Level B harassment of marine mammals.	The following mitigation measures would apply: *MM MW-6a. Use of well-maintained and lubricated clamshell bucket.* *MM WQ-2a*	Less than significant (III)
MW-7	II (I for ocean dis-posal)	Transport, ocean disposal, smoothing of shell mounds, and testing resulting in release of bioaccumulative or toxic substances.	The following mitigation measures would apply: *MM WQ-2a through -2d* *MM WQ-3a* *MM MB-2a* *MM MB-4a and -4b* *MM MW-2a2* *MM MW-2a12 and -2a13* *MM MW-4a1 through -4a3*	Beneficial (IV) for removing shell mounds; less than significant (III) if appreciable shell mounds remain after smoothing; significant and unmitigable (I) if ocean disposal
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-1	IV	Removal of the 4H shell mounds would permanently remove contaminated sediments associated with the shell mounds from the marine environment.	*None proposed.*	Beneficial (IV)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
CRF-2	II	Commercial and recreational fishing would be precluded in the project vicinity during project activities.	*MM CRF-2a. The Applicant shall provide 30-day advance notice of pending activities at the shell mounds sites to enable fishers to avoid the affected area. Specifically, the Applicant shall ensure that: (1) notification is received by the Joint Oil/Fisheries Liaison Office and posted at the Harbor Masters offices in Morro Bay, Avila, Santa Barbara, Ventura, Channel Islands, and Hueneme; and (2) project information is provided in the Local Notice to Mariners issued by the Eleventh Coast Guard District. Information provided shall include, at a minimum, a description of the proposed action, a map of the project site(s), and an estimate of the expected duration of project activities.* *MM CRF-2b. The Applicant shall compensate fishers who are able to demonstrate a loss of catch. Compensation shall be based on the average of the previous five years catch during the season and area of activity.*	Less than significant (III)
CRF-3	II	Contaminants, including oil, released during project operations will disperse into the water column and onto the seafloor, resulting in the exposure of commercially and recreationally fished species to contaminants, with potential toxic or bioaccumulation effects (see WQ-2, WQ-3, and MB-2).	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-4	II	Explosive demolition of the caissons at the Hazel site will result in the mortality of fishes that are commercially or recreationally harvested in the immediate vicinity.	*See MM MB-6a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
CRF-5	II	The transport of materials may interfere with fishing boats, result in accidental spillage that could expose fishery resources to contaminants, or otherwise conflict with fishing activities.	*See MM MB-4a and -4b*	Less than significant (III)
CRF-6	I	Ocean disposal of shell mounds sediments at LA-2, if approved, would have potentially toxic effects on marine biota.	*None proposed.*	Significant and unmitigable (I)
CRF-7	IV	Removal of the 4H shell mounds and caissons would restore trawling and other types of fishing to the areas occupied by and adjacent to the mounds where such fishing activities have been prevented.	*None proposed.*	Beneficial (IV)
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1	II	Vessels and equipment could cause release of hazardous substances, including diesel fuel, oil, or lubricant leaks or spills.	*MM HAZ-1a. Oil spill contingency plan approved by CSLC. To address spill prevention, spill response measures for accidental hydrocarbon release. Will identify key points of contact, vessels and equipment, contractors, schedules, and procedures.*	Less than significant (III)
HAZ-2	II	Release of diesel fuel, oil, or lubricant leaks or spills could create potential health hazard, affect public health and safety.	*MM HAZ-2a. Vessel emergency response plans approved by CSLC, identifying equipment, and supplies for use in the event of a spill. Plans to identify key points of contact, vessels and equipment, contractors, schedules, and procedures.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
HAZ-3	II	Use of explosives to demolish Platform Hazel caissons could create a potential safety hazard.	*MM HAZ-3a. Human Health and Safety Plan, approved by CSLC, to incorporate relevant permit conditions, all of the elements discussed in this section. Plan to identify key points of contact, vessels and equipment, contractors, schedules, and procedures. To incorporate the following:* *MM HAZ-3a1. Demolition contractor to have approved explosive transportation and operations identifying safe practices, warnings, and procedures.* *MM HAZ-3a2. All personnel to be briefed on procedures and requirements in explosives transportation and operation plan.* *MM HAZ-3a3. Explosive devices to be properly packaged for shipment, staged in approved offshore magazine until demolition, loaded and secured on a DOT-approved truck for transport to loading dock.*	Less than significant (III)
HAZ-4	II	Underwater tasks necessary for removal of Hazel caissons could expose divers to safety hazards.	*MM HAZ-4a. Ocean conditions to be taken into consideration during both diving, marine vessel operations. Dive supervisor, dive vessel barge master responsible for determining safe weather-related diving conditions.*	Less than significant (III)
HAZ-5	III	Post-detonation fumes associated with underwater cutter explosions could cause health risk for workers in nearby vessels.	*MM HAZ-5a. Post-detonation fumes shall be allowed to clear before vessels are allowed to re-enter the former Platform Hazel area.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
Program Alternative 2: Leveling and Spreading of Shell Mounds with Caissons Removal and Disposal				
SECTION 3.1 AIR QUALITY				
AQ-2	II	Emissions from shell mound spreading and caisson removal and transport activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*See MMs AQ-1a through -1c*	Less than significant (III)
	II	Emissions from caisson material transport and disposal activities would exceed the SCAQMD daily NOx threshold of 100 pounds.	The following mitigation measures would apply: *MM AQ-1a* *MM AQ-1b* *MM AQ-1d*	Less than significant (III)
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-5	II or III	Disturbance and resuspension of shell mound materials from leveling/spreading-related operations.	*MM WQ-5a. Provision of on-site response team with equipment.*	Less than significant (III)
WQ-6	I	Chronic toxicity and contaminant bioaccumulation in areas where spreading and mixing with native sediments are inadequate to reduce contaminant concentrations to the extent they are no longer deleterious.	*None proposed.*	Significant and unmitigable (I)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-2	I	See MB-2	*None proposed.*	Significant and unmitigable (I)
MB-3	I	See MB-3	*None proposed.*	Significant and unmitigable (I)
MB-4	II	See MB-4	*See MMs MB-4a and MB-6a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MB-6	II	See MB-6	*See MMs MB-4a and MB-6a*	Less than significant (III)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-8	I	Leveling, spreading and leaving materials in place resulting in bioaccumulation or toxic impacts.	*None proposed.*	Significant and unmitigable (I)
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-2	II	See CRF-2	*See MM CRF-2a and -2b*	Less than Significant (III)
CRF-3	II	See CRF-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-4	II	See CRF-4	*See MM MB-6a*	Less than significant (III)
CRF-5	II	See CRF-5	*See MM MB-4a and -4b*	Less than significant (III)
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1	II	See HAZ-1	*See HAZ-1a*	Less than significant (III)
HAZ-2	II	See HAZ-2	*See HAZ-2a*	Less than significant (III)
HAZ-3	II	See HAZ-3	The following mitigation measures would apply: *MM HAZ-3a* *MM HAZ-3a1* *MM HAZ-3a2* *MM HAZ-3a3*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
HAZ-4	II	See HAZ-4	*See MM HAZ-4a*	Less than significant (III)
HAZ-5	III	See HAZ-5	*See MM HAZ-5a*	Less than significant (III)
Program Alternative 3: Capping				
SECTION 3.1 AIR QUALITY				
AQ-3	II	Emissions from material transport and placement activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*See MMs AQ-1a through -1c*	Less than significant (III)
	II	Emissions from material transport activities would exceed the SCAQMD daily ROC, NOx, and SO2 thresholds. These activities also would exceed the SCAQMD calendar quarter ROC, CO, NOx, and SO2 thresholds.	*The following mitigation measures would apply:* *MM AQ-1a* *MM AQ-1b* *MM AQ-1d*	Less than significant (III)
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-7	II	Rapid or uncontrolled placement of capping material could disturb the mound, releasing contaminated shell mound sediments with potential for toxic effects on marine biota.	*MM WQ-7a. Use a down pipe to deposit cap material carefully and at low velocities over the shell mounds.*	Less than significant (III)
WQ-8	II	The weight of the cap may compact the mounds, causing releases of sediment pore waters and associated chemical contaminants to overlying waters.	*MM WQ-8a. Design and specify a cap thickness that is sufficient to absorb the volume of pore water potentially released from the mounds.*	Less than significant (III)
WQ-9	II	Continuing risk of contaminant releases to the environment, with potential toxicity and bioaccumulation effects to aquatic organisms.	*MM WQ-9a. Conduct annual surveys to document that the cap thickness remains 3.3 ft (1 m) or greater, and replenish areas of the cap as needed.*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-2	II	See MB-2	*See MMs MB-2a and MB-4a*	Less than significant (III)
MB-4	II	See MB-4	*See MMs MB-2a and MB-4a*	Less than significant (III)
MB-7	II	Deposition of the capping material or damage to the cap may resuspend sediments and have toxic effects on marine biota.	The following mitigation measures would apply: *MM WQ-7a* *MM WQ-8a* *MM WQ-9a*	Less than significant (III)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-9	II	If cap damaged, release of bioaccumulative or toxic substances possible.	The following mitigation measures would apply: *MM MW-2a2* *MM MW-2a12 and -2a13* *MM MW-4a1 through -4a3* *MM WQ-7a* *MM WQ-8a* *MM WQ-9a*	Less than significant (III)
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-2	II	See CRF-2	*See MM CRF-2a and -2b*	Less than significant (III)
CRF-3	II	See CRF-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-5	II	See CRF-5	*See MM MB-4a and -4b*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
CRF-8	II	Deposition of new material may resuspend sediments or damage the shell mounds, thus exposing commercially or recreationally fished species to contaminants.	*See MMs WQ-7a, WQ-8a, and WQ-9a*	Less than significant (III)
CRF-9	II	The shell mounds and/or new materials may preclude certain types of fishing within the surrounding area.	*MM CRF-9a. To minimize the area that trawlers avoid around the shell mound sites, the Applicant shall institute the previous commitment to provide Global Positioning System (GPS) navigation/net locator equipment to trawlers that utilize the area.*	Less than significant (III)
CRF-10	II	Due to the continuing presence of the shell mounds, there is a continuing risk of exposure to contaminants from future disturbance or erosion of the mounds.	*See MM WQ-9a*	Less than significant (III)
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1 & HAZ-2	II	See HAZ-1 and HAZ-2	The following mitigation measures would apply: *MM HAZ-1a* *MM HAZ-2a*	Less than significant (III)
Program Alternative 4: Artificial Reefs at all Four Shell Mounds				
SECTION 3.1 AIR QUALITY				
AQ-4	II	Emissions from rock transport and placement activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*See MMs AQ-1a through -1c*	Less than significant (III)
	II	Emissions from rock transport activities would exceed the SCAQMD daily NOx threshold of 100 pounds.	The following mitigation measures would apply: *MM AQ-1a* *MM AQ-1b* *MM AQ-1d*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-10	II	Rapid or uncontrolled release of reef rocks could disturb the mound, releasing contaminated shell mound sediments with potential for toxic effects on marine biota.	*MM WQ-10a. Prepare a detailed plan for constructing the reef that addresses construction equipment and appropriate procedures for ensuring accurate placement of reef rocks and minimizing potentials for inadvertent releases of construction materials on top of the mounds.* *MM WQ-10b. Conduct post-construction surveys to document that the mounds have not been disturbed.*	Less than significant (III)
WQ-11	II	Continuing risk of contaminant releases to the environment, with potential toxicity and bioaccumulation effects to aquatic organisms.	*MM WQ-11a. Conduct annual surveys to document that the volumes of the mounds have not changed. If the mound volumes have changed, remove or remediate the mounds.*	Less than significant (III)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-2	III	See MB-2	*See MMs MB-2a, and WQ-2a through -2d*	Less than significant (III)
MB-3	II	See MB-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-4a*	Less than significant (III)
MB-4	II	See MB-4	*See MM MB-4a and -4b*	Less than significant (III)
MB-8	II	Deposition of quarry rock or other reef materials on top of the shell mounds may damage the mounds resulting in resuspension of sediments and toxic effects on marine biota.	The following mitigation measures would apply: *MM WQ-10a* *MM WQ-10b* *MM WQ-11a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
MB-9	II	There would be permanent replacement of natural seafloor habitat with the shell mounds, resulting in a continuing risk of contaminant releases that would have potential toxicity and bioaccumulation effects on biota residing onsite.	*MM MB-9a. To offset the permanent replacement of 4 acres of native seafloor habitat by the shell mounds (not including the artificial reefs), the Applicant shall create or restore an equal area of fisheries habitat by funding existing estuarine habitat restoration at Carpinteria Marsh.*	Less than significant (III)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-10	II	Quarry rock would not completely prevent release of bioaccumulative or toxic substances.	The following mitigation measures would apply: *MM MW-2a2* *MM MW-2a12 and -2a13* *MM MW-4a1 through -4a3* *MM WQ-3a* *MM WQ-11a*	Less than significant (III)
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-2	II	See CRF-2	*See MM CRF-2a and -2b*	Less than significant (III)
CRF-3	II	See CRF-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-5	II	See CRF-5	*See MM MB-4a and -4b*	Less than significant (III)
CRF-8	II	See CRF-8	*See MMs WQ-7a, WQ-8a, and WQ-9a*	Less than significant (III)
CRF-9	II	See CRF-9	*See MMs CRF-9a*	Less than significant (III)
CRF-10	II	See CRF-10	*See MM WQ-9a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
CRF-11	IV	Creation of artificial reefs would benefit recreational fishing opportunities.	*None proposed.*	Beneficial (IV)
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1 & HAZ-2	II	See HAZ-1 and HAZ-2	The following mitigation measures would apply: *MM HAZ-1a* *MM HAZ-2a*	Less than significant (III)
Program Alternative 5a: Artificial Reef at Hazel after Removing Shell Mounds				
SECTION 3.1 AIR QUALITY				
AQ-5a	II	Emissions from shell mound removal/ transport and rock transport/placement activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*See MMs AQ-1a through -1c*	Less than significant (III)
	II	Emissions from transport and disposal activities for each Program Alternative option would exceed the SCAQMD daily and calendar quarter NOx threshold. Also, emissions from transport and disposal activities for the Kern County and SCAB disposal options would exceed the SCAQMD daily ROC and CO thresholds.	The following mitigation measures would apply: *MM AQ-1a* *MM AQ-1b* *MM AQ-1d*	Less than significant (III)
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-1	IV	See WQ-1	*None proposed.*	Beneficial (IV)
WQ-2	II or III	See WQ-2	*See MMs WQ-2a and -2e*	Less than significant (III)
WQ-3	II	See WQ-3	*See MM WQ-3a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
WQ-4	I	See WQ-4	*None proposed.*	Significant and unmitigable (I)
	II	See WQ-4	The following mitigation measures would apply: *MM WQ-2a (approved practices including limits on loading barges)* *MM MB-4a* *MM MB-4b*	Less than significant (III)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-1	IV	See MB-1	*None proposed.*	Beneficial (IV)
MB-2	III	See MB-2	The following mitigation measures would apply: *MM MB-2a* *MM WQ-2a and -2d*	Less than significant (III)
MB-3	II	See MB-3	The following mitigation measures would apply: *MM MB-2a* *MM WQ-2a through -2e* *MM WQ-3a* *MM MB-4a*	Less than significant (III)
MB-4	II	See MB-4	The following mitigation measures would apply: *MM MB-4a and -4b*	Less than significant (III)
MB-5	I	See MB-5	*None proposed.*	Significant and unmitigable (I)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-1	IV	See MW-1	*None proposed.*	Beneficial (IV)
MW-4	II	See MW-4	The following mitigation measures would apply: *MM MW-4a1 through -4a3* *MM MB-2a*	Less than significant (III)
MW-5	II	See MW-5	The following mitigation measures would apply: *MM WQ-2a through -2e* *MM WQ-3a* *MM MB-2a*	Less than significant (III)
MW-6	II	See MW-6	*See MM MW-6a and WQ-2a*	Less than significant (III)
MW-7	II (I for ocean dis-posal)	See MW-7	The following mitigation measures would apply: *MM WQ-2a through -2d* *MM WQ-3a* *MM MB-2a* *MM MB-4a and -4b* *MM MW-2a2* *MM MW-2a12 and -2a13* *MM MW-4a1 through -4a3*	Beneficial (IV) for removing shell mounds; less than significant (III) if appreciable shell mounds remain after smoothing; significant and unmitigable (I) if ocean disposal
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-1	IV	See CRF-1	*None proposed.*	Beneficial (IV)
CRF-2	III	See CRF-2	*See MM CRF-2a and -2b*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
CRF-3	II	See CRF-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-5	II	See CRF-5	*See MM MB-4a and -4b*	Less than significant (III)
CRF-9	II	See CRF-9	*See MMs CRF-9a*	Less than significant (III)
CRF-11	IV	See CRF-11	*None proposed.*	Beneficial (IV)
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1 & HAZ-2	II	See HAZ-1 and HAZ-2	The following mitigation measures would apply: *MM HAZ-1a* *MM HAZ-2a*	Less than significant (III)
Program Alternative 5b: Artificial Reef at Hazel after Spreading Shell Mounds				
SECTION 3.1 AIR QUALITY				
AQ-5b	II	Emissions from shell mound spreading and rock transport/placement activities would exceed the SBCAPCD daily NOx threshold of 240 pounds.	*See MMs AQ-1a through -1c*	Less than significant (III)
	II	Emissions from rock transport activities would exceed the SCAQMD daily NOx threshold of 100 pounds.	The following mitigation measures would apply: *MM AQ-1a* *MM AQ-1b* *MM AQ-1d*	Less than significant (III)
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-5	II or III	See WQ-5	*See MM WQ-5a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
WQ-6	I	See WQ-6	*See MM WQ-5a*	Significant and unmitigable (I)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-2	I	See MB-2	*None proposed.*	Significant and unmitigable (I)
MB-3	I	See MB-3	*None proposed.*	Significant and unmitigable (I)
MB-4	II	See MB-4	*See MM MB-4a*	Less than significant (III)
MB-5	I	See MB-5	*None proposed.*	Significant and unmitigable (I)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-8	I	See MW-8	*None proposed.*	Significant and unmitigable (I)
SECTION 3.5 COMMERCIAL AND RECREATIONAL FISHING				
CRF-1	IV	See CRF-1	*None proposed.*	Beneficial (IV)
CRF-2	II	See CRF-2	*See MM CRF-2a and -2b*	Less than significant (III)
CRF-3	II	See CRF-3	*See MMs WQ-2a through -2e, WQ-3a, and MB-2a*	Less than significant (III)
CRF-5	II	See CRF-5	*See MM MB-4a and -4b*	Less than significant (III)
CRF-9	II	See CRF-9	*See MMs CRF-9a*	Less than significant (III)
CRF-11	IV	See CRF-11	*None proposed.*	Beneficial (IV)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact

Table ES-1. Summary of Significant Impacts and Mitigation Measures

(continued)

Impact No.	*Impact Class**	*Environmental Impact*	*Mitigation Measures*	*Residual Impact*
SECTION 3.9 SAFETY/HAZARDS/RISK OF UPSET				
HAZ-1 & HAZ-2	II	See HAZ-1 and HAZ-2	The following mitigation measures would apply: *MM HAZ-1a* *MM HAZ-2a*	Less than significant (III)
Program Alternative 6: Offsite Mitigation				
SECTION 3.1 AIR QUALITY				
AQ-6	II	Significant air quality impacts associated with offsite mitigation actions could occur from (1) combustive emissions due to the use of fossil fuel-fired equipment used in activities such as dredging, earth-moving, or clearing of vegetation or (2) fugitive dust due to the use of equipment on dry soils.	See mitigations in the Final EIR for the Carpinteria Salt Marsh Enhancement Plan (SBCFCWCD 2003, SCH 2003021016).	Less than significant (III)
SECTION 3.2 MARINE WATER QUALITY AND SEDIMENT QUALITY				
WQ-12	II	Continuing risks of contaminant releases to the environment, with potential toxicity and bioaccumulation effects to aquatic organisms.	*See MM WQ-11a*	Less than significant (III)
SECTION 3.3 MARINE BENTHIC HABITATS, INVERTEBRATES, AND FISHES				
MB-9	II	See MB-9	*See MM MB-9a*	Less than significant (III)
SECTION 3.4 MARINE WILDLIFE (MARINE MAMMALS, SEA TURTLES, SEABIRDS)				
MW-11	II	On going risks of release of bioaccumulative or toxic substances.	*See MM WQ-11a*	Less than significant (III)

* Impacts are classified as:

Class I = Significant adverse impact that cannot be mitigated to a level of insignificant
Class II = Significant adverse impact that can be mitigated to a level of insignificant
Class III = Adverse, insignificant impact
Class IV = Beneficial impact